



Central Midwest Interstate
Low-Level Radioactive
Waste Commission

THIRTY-THIRD
ANNUAL REPORT

July 1, 2017 – June 30, 2018

Prepared by the
Central Midwest Interstate
Low-Level Radioactive Waste Commission

Joseph G. Klinger
Chairman

Dewey F. Crawford
Secretary/Treasurer

Gary W. McCandless, P.E.

TABLE OF CONTENTS

- History.....1
- Mission1
- Low-Level Waste Compacts.....2
- Low-Level Waste Disposal Facilities.....3
- Disposal Options.....4
- Illinois Waste Generation.....5
- Kentucky Waste Generation.....7
- Kentucky Updates.....8
- Observations and Current Activities.....10
- Agreements & Plans.....11
- Commission Activities.....11
- Audits12
- Balance Sheet.....13
- Statement of Revenue.....14
- Statement of Cash Flows.....15

HISTORY

In response to a federal policy, declared in the Low-Level Radioactive Waste Policy Act of 1980 (1980 Act) (42 USC 2021b et seq.), that each state is responsible for assuring that disposal capacity is available for certain categories of low-level radioactive waste (LLRW) generated within its borders, the State of Illinois and the Commonwealth of Kentucky entered into the Central Midwest Interstate Low-Level Radioactive Waste Compact (CMC). Congress has consented to the CMC and the Southeast, Midwest, Central States, Rocky Mountain, Atlantic, Appalachian, Southwestern, Northwest and Texas Interstate Compacts.

MISSION OF CENTRAL MIDWEST COMPACT

A three-member Commission administers the CMC. Illinois Commissioners are Chairman Joseph Klinger and Gary McCandless. Dewey Crawford is the Commissioner representing Kentucky and serves as the Secretary/Treasurer.

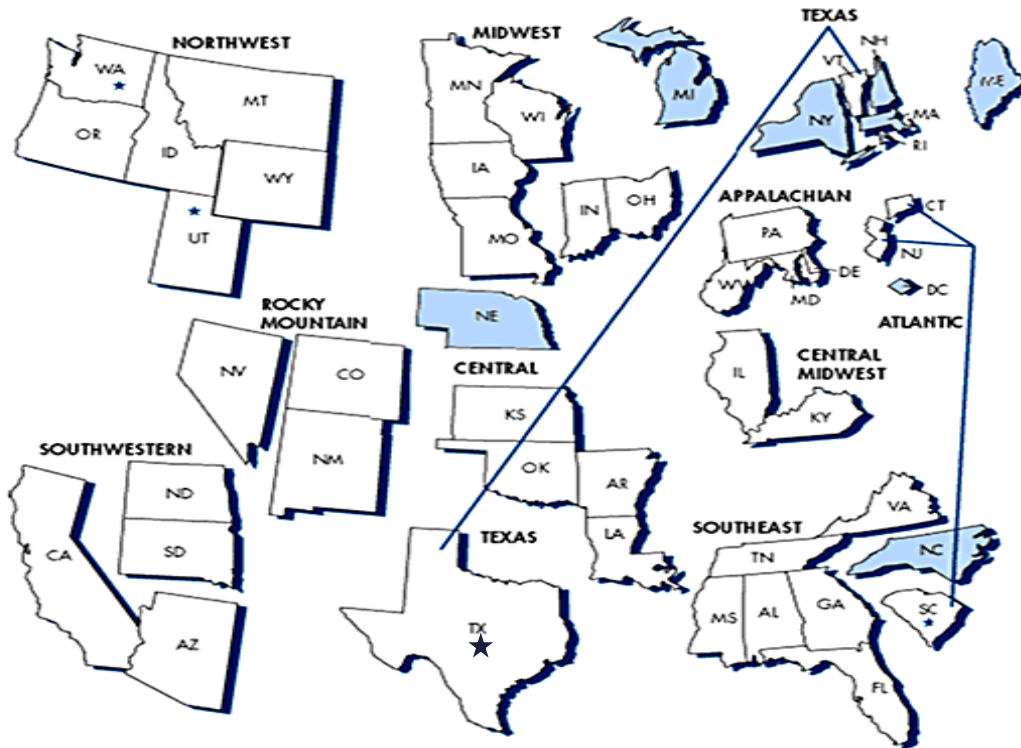
The Commission is required to adopt, and amend as necessary, a Regional Management Plan. The Regional Management Plan describes the number and type of regional storage, treatment, and disposal facilities needed; adopts policies regarding source and volume reductions; and describes alternative means for treatment, storage, and disposal of LLRW. The Commission is authorized to designate a host state for each regional facility, but only a state that generates more than 10 percent of their region's total volume of low-level radioactive waste. Illinois has been designated as the host state for a regional disposal facility. Use of storage, treatment, and disposal facilities in the region for LLRW originating from outside the region, and export of LLRW from the CMC region, is subject to Commission approval. The Commission may enter into an agreement or contract with a state, a group of states, or persons for access to a facility in the region.



Central Midwest Interstate Low-Level Radioactive Waste Commission

Low-Level Waste Compacts

<http://www.nrc.gov/waste/llw-disposal/licensing/compacts.html>



★ Active Disposal Site (4)	Alaska and Hawaii belong to Northwest Compact
□ Approved Compact (10)	■ Unaffiliated (10)

Unaffiliated States

- | | | |
|----------------------|----------------|--------------|
| District of Columbia | Maine | Puerto Rico |
| Massachusetts | Michigan | Rhode Island |
| Nebraska | New Hampshire | |
| New York | North Carolina | |

LOW-LEVEL WASTE DISPOSAL FACILITIES

There are four active, licensed low-level waste disposal facilities that are located in Agreement States (see [map](#)), however, only three are available to generators in the Central Midwest Compact. Additional information about the facilities may be found at the Web sites maintained by the respective Agreement States.

- **EnergySolutions Barnwell Operations, located in Barnwell, South Carolina**
Barnwell previously accepted waste from all U.S. generators except those in the Rocky Mountain and Northwest [Compacts](#). Since 2008, Barnwell only accepts waste from the Atlantic compact states (Connecticut, New Jersey, and South Carolina). Barnwell is licensed by the State of South Carolina to receive wastes in Classes A-C.
- **U.S. Ecology, located in Richland, Washington**
Richland accepts waste from the Northwest and Rocky Mountain [compacts](#). Richland is licensed by the State of Washington to receive wastes in Classes A-C.
- **EnergySolutions Clive Operations, located in Clive, Utah**
Clive accepts waste from all regions of the United States. Clive is licensed by the State of Utah for Class A waste only.
- **Waste Control Specialists (WCS), LLC, located near Andrews, Texas**
WCS accepts waste from the Texas Compact generators and outside generators with permission from the Compact. WCS is licensed by the State of Texas for Classes A, B, and C waste.

<http://www.nrc.gov/waste/llw-disposal/licensing/locations.html>



Disposal Options for CMC

Generators in the Central Midwest Region continue to have access to the *EnergySolutions* disposal facility located in Clive, Utah for certain radioactive wastes. This facility accepts Class A waste, both containerized and un-containerized and naturally occurring radioactive materials. This facility also accepts mixed waste (i.e., waste that is both radioactive and chemically hazardous) generated in the Central Midwest region. The Commission anticipates that Illinois and Kentucky generators will continue to have access to the *EnergySolutions* facility.



Fortunately in July 2012 the Waste Control Specialists, Inc. disposal facility in Andrews County Texas became authorized to accept outside of Texas Compact Class A, Class B and Class C low-level radioactive waste at the Compact Waste Facility. Some Central Midwest Compact waste generators have submitted applications and proposed agreements for importation of low level radioactive waste particularly for Class B and Class C.



Waste considered to be naturally occurring radioactive material (NORM) can be disposed at the US Ecology Richland, Washington disposal facility, or at several US EPA RCRA Subtitle C landfills (NORM material with lower concentrations).



Illinois Waste Generation – Current and Future Projections

In compliance with the Management Act, the Illinois Emergency Management Agency (IEMA) conducts an annual survey of the LLRW generators located in Illinois and any broker or processor that handles Illinois LLRW within or outside of the state. Each generator provides IEMA with information by completing the Generators Annual Survey about the types, quantities, and activity of LLRW generated, stored, treated, and disposed of and future LLRW shipment projections. Brokers and processors provide information regarding any and all Illinois waste received, treated, processed, and shipped for disposal by completing the Brokers' and Processors' Annual Survey.

IEMA operates a system to administratively track shipments of LLRW that have a point of origination or destination in the state of Illinois. Persons who ship LLRW into, out of, or within the state must obtain a permit from IEMA and report shipment information electronically to the tracking system. Brokers can provide the Electronic Data Transmission (EDT) files on behalf of their generator customers. IEMA provides the information collected by the tracking system back to the generators in the form of completed annual survey tables for generator verification.

Illinois LLRW generation in 2017 continued to demonstrate the typical variation in year to year production. The number of generators increased from 2016 to 2017 by one.

Illinois LLRW Generator Survey Response by Generator Category 2011 – 2017

Generator Category	2011	2012	2013	2014	2015	2016	2017
Academic	29	28	30	31	29	26	28
Fuel Cycle	2	2	2	2	2	2	2
Governmental	15	15	16	16	17	20	26
Industrial	58	57	62	64	63	61	61
Medical	316	313	302	296	288	288	281
Reactor	7	7	7	7	7	7	7
Total	427	422	419	416	406	404	405

LLRW Volume Projections (ft³)
2018 – 2024

Year	2018	2019	2020	2021	2022	2023	2024
Academic	232	232	231	231	229	229	229
Fuel Cycle	5300	370	420	670	120	170	220
Governmental	150	30	30	30	30	30	30
Industrial	4776	4766	4788	4752	4759	4752	4759
Medical	137	137	175	137	137	172	134
Reactor	147800	141199	140931	147899	140931	141080	147750
Total	158,396	146,734	146,576	153,719	146,207	146,433	153,123

The IEMA 2017 Annual Survey required generators to project the amount of LLRW they expect to produce or possess between 2017 and 2023. This information is used by the agency for determining the development timeframe for a regional disposal facility or the need for an interim storage facility. Past history has indicated that the non-reactor generators underestimated volumes and activities by three to four times what was actually generated and disposed.

Kentucky Waste Generation

Kentucky Cabinet for Health Services, Radiation Health Branch (RHB) conducts an annual survey of the LLRW generators located within the Commonwealth. Each generator completes the Annual Survey by listing the types, quantities, and activity of LLRW generated, stored, treated, and disposed. Additionally, Brokers and processors provide information regarding any and all waste received, treated, processed, and shipped out of the state for disposal. Shippers of LLRW into and out of the state must obtain authorization from RHB and identify the shipment. Please note that Kentucky's report is for calendar year 2017.

Kentucky LLRW Waste Generator Report for 2017-2018									
Waste Generator	Year	Generator Category	Class of Waste	Form	Total Volume ft3	Rad Quantity mCi	Rad Nuclides	Disposal Method	Shipper/ Broker Comments
Centre College	2017	Academic	A						
Murray State University	2017	Academic	A	Liquid/Solid	21.5	0.164	3H, 14C, 137Cs	Decay In Storage	
Northern Kentucky University	2017	Academic	A	Mixed	~1		32P	Decay In Storage	
University of Kentucky	2017	Academic	A	Liquid/Solid	155.22	40.039	3H, 14C, 125I, 55Fe, 51Cr	Broker	Bionomics
University of Kentucky	2017	Academic	A	Liquid	27	1.82	3H, 14C, 125I, 55Fe	Decay In Storage	
TOTAL	2017	Academic			203.72	42.023			
Chase Environmental	2017	Industrial							
Clariant Corporation	2017	Industrial	A	Liquid	150		238U	Storage	
Clariant Corporation	2017	Industrial	A	Liquid	1925	444.28	238U	Broker	Chase Environmental Group
Sudi-Chemie	2017	Industrial							
Transport Logistics International	2017	Industrial	A	Mixed	1109	28.52	238U	Broker	Waste Control Specialists
Transport Logistics International	2017	Industrial	A	Mixed	5		238U	Decay In Storage	
TOTAL	2017	Industrial			3189	472.8			
PETNET	2017	Medical	A	Liquid	4.8	5	57Co, 3H	Broker	Philotechnics
PETNET	2017	Medical	A	Liquid	14		57Co, 56Co, 109Cd, 18W, 65Zn	Decay In Storage	
TOTAL	2017	Medical			18.8	5			
Kentucky EPPC/DEP	2017	State Government	A	Liquid & Material					
RML/RHB	2017	Government	A	(Gel)	27.7	0.03	99Tc	Storage	
Kentucky RML/RHB	2017	State Government	A	Liquid (Gel)	15.4	0	3H, 60Co, 90Y/90Sr, 232U	Broker	Bionomics
TOTAL	2017	State Gov.			43.1	0.03			
					SUM TOTAL	3454.62	519.853		

Kentucky LLRW Volumes (ft ³)							
2017 – 2018							
Year	Actual 2013	Actual 2014	Actual 2015	Actual 2016	2017	2018	2019
Academic		8.3	0.5	328.69	203.72		
Fuel MGF (PGDP) DOE Facility		5,623	590.9	168.9			
State Governmental		60.5	14	43.1	45.3		
Industrial	91	463	220	6,246	3,189		
Medical	2	7.6	0.12	19.1	18.8		
Reactor							
Total	93	6,162	826	6,806	3,457		

The above volumes include LLRW stored for decay and quantities shipped. Tabulation is derived from facility reports to the Kentucky RHB and Shipper reports. Volumes specified as "DOE Facility are the direct regulatory responsibility of the Department of Energy and the Nuclear Regulatory Commission.

Kentucky TENORM Update

Background: In the summer of 2015, waste containing TENORM from oil and gas operations originating from a non-compact state was disposed at a landfill in Estill County, Kentucky by companies that processed and enhanced the waste. The prohibited waste continued to be imported and disposed of in the landfill through November 2015. The Kentucky Division of Waste Management learned in January 2016 that the out-of-state prohibited waste had been disposed of at a landfill in Greenup County and subsequently learned of the disposal in Estill County. The Division issued a notice in February 2016 to owners and operators of all contained landfills in Kentucky that it was their duty to comply with all statutes and regulations regarding radioactive materials.

Following the illegal dumping incident, the Cabinet for Health Services, Radiation Control Program using the authority provided by KRS 211.863 and in conjunction with Kentucky's Environmental and Energy Cabinet began to seek financial compensation against the violators. Following much consideration, it was determined that the safest solution for the TENORM dumped in the landfill was to assure there was no surface contamination and leave it in place. The Kentucky Radiation Environmental Laboratory developed a monitoring program of water, air and land for the site to assure stability and continued public safety.

As these actions proceeded, the Radiation Control Program communicated with Kentucky Commissioner Crawford, Illinois CMCC Commissioners and the Illinois Radiation Control Program toward establishing Technologically Enhanced Natural Occurring Radioactive Material (TENORM) regulations for Kentucky.

As a result of these efforts, Kentucky TENORM regulations 902 KAR 100:180 became effective December 7, 2017.

It must be noted that the state of Illinois had regulations in place for the management of TENORM from specific sources.

Maxey Flats: In November 2012, Maxey Flats Disposal Site was placed into the Final Closure Period which includes installation of a permanent vegetative cap, installation of permanent surface water control features, and installation of surface monuments to identify the location of buried waste. The Environmental Protection Agency (EPA) has declared the Final Closure Period complete and installation of the final landfill cap has been constructed. A 100-year institutional control period is in progress. The fourth Five-Year-Review of the remedy was approved on September 28, 2017. Additional information may be found at <http://waste.ky.gov/SFB/Pages/MaxeyFlatsProject.aspx>.

Paducah Gaseous Diffusion Plant: The Paducah Gaseous Diffusion Plant was in operation from September 1952 to June 2013 and was operated historically for national defense purposes until 1964, after which it produced fuel-grade uranium used to generate electricity in nuclear reactors. The U.S. Environmental Protection Agency (EPA) declared it a Superfund site in 1988. All operations have ceased at the plant and deconstruction and remediation continue at the site. According to the DOE, Office of Environmental Management, the current end state completion baseline date for Paducah is 2030. Additional information may be obtained at; <http://waste.ky.gov/HWB/Pages/PaducahGaseousDiffusionPlant.aspx>.

http://www.ukrcee.org/History/PGDP_History.aspx.

OBSERVATIONS AND CURRENT ACTIVITIES

- Participating member of the Low-Level Waste Forum. The LLW Forum's goals are to educate policy makers and the public about the management and disposal of low-level radioactive wastes, and to foster information sharing and the exchange of views between states and compacts. The Central Midwest Compact Commissioners participated at the October 16-17, 2017, Forum meeting in Alexandria, VA and the April 16-17, 2018 Forum meeting in San Francisco, CA.
- In addition to the LLW Forum activities, Commissioner Klinger Chaired the Disused Sources Working Group (DSWG) to develop recommendations for improving the management of disused sealed sources that pose a threat to national security. The Working Group, which is comprised of eight directors of the LLW Forum, solicited input from a broad range of stakeholders at 19 meetings over a 30-month period. A Summary of Findings and Recommendations can be found here:
<http://www.disusedsources.org/recommendations-of-the-dswg/>
- The DSWG is making valuable documents available to licensees. One recent document available: Considering the Use of Radioactive Sealed Sources and Devices. This document gives realistic costs of using and storing sealed sources and devices. The document can be found here:
[http://www.swllrcc.org/datafiles/DSWG%20Brochure%20to%20Current%20Licensees%20FINAL%2012.16.16%20\(2\).pdf](http://www.swllrcc.org/datafiles/DSWG%20Brochure%20to%20Current%20Licensees%20FINAL%2012.16.16%20(2).pdf)

AGREEMENTS AND PLANS

Interregional Facility Access Agreements

Interregional Facility Access Agreements ensure that Illinois and Kentucky waste generators can continue to use the existing facilities outside the region to treat or temporarily store their waste.

On November 4, 1997, the Commission voted in favor of signing the National Interregional Access Agreement for Waste Management (October 23, 1992). To date this leaves only the Atlantic Compact, New Hampshire, Puerto Rico, and Rhode Island who have not signed the National Agreement. At a Regular Meeting in April 2006, the Commission voted not to renew previous agreements with other states and compacts (the Rocky Mountain, Southwestern, Northeast, Midwest and Southeast Compacts, the State of Michigan and the Commonwealth of Massachusetts) when these agreements expired in 2011. However, the Central Midwest Compact has an Interregional Agreement with the Atlantic Compact.

Regional Management Plan

The Commission is required to adopt and amend, as appropriate, a plan for managing the region's low-level radioactive waste. The Regional Management Plan was adopted in 1988. In May of 1999 at a meeting held in Chicago, Illinois, the Commission unanimously voted to accept the revised 1999 Regional Management Plan. A copy of the plan is available through the Internet address (URL) <http://www.cmcompact.org> or by calling the Commission office at (217) 836-3018.

COMMISSION ACTIVITIES

September 12, 2017 – Annual Meeting held in Springfield, IL

April 23, 2018 - Spring Meeting held in Springfield, IL

Meeting Minutes are available here: <http://cmcompact.org/pastmeetings.asp>

AUDITS

The financial records of the Commission were audited in compliance with Article XI of the Commission's bylaws. The auditing firm of Robin L. Malloy, CPA performed an audit of the Commission's records finding that the financial statements accurately represent the Commission's financial position according to generally accepted accounting principles.

Central Midwest Interstate Low-Level
Radioactive Waste Compact Commission
BALANCE SHEETS
June 30, 2018 and 2017

Statement 1

	<u>2018</u>	<u>2017</u>
<u>Assets</u>		
CURRENT ASSETS		
Cash and cash equivalents	\$ 11,796	\$ 11,936
Investments	2,401,908	2,395,056
Interest receivable	<u>9,648</u>	<u>6,039</u>
TOTAL ASSETS	<u>\$2,423,352</u>	<u>\$ 2,413,031</u>
<u>Liabilities and Fund Balance</u>		
CURRENT LIABILITIES		
Accounts payable	\$ _____	\$ _____
FUND BALANCE	<u>2,423,352</u>	<u>2,413,031</u>
TOTAL LIABILITIES AND FUND BALANCE	<u>\$ 2,423,352</u>	<u>\$ 2,413,031</u>

The accompanying notes are an integral part of these financial statements.

Central Midwest Interstate Low-Level
Radioactive Waste Compact Commission
**STATEMENTS OF REVENUE, EXPENDITURES AND
CHANGES IN FUND BALANCE**
For the Years Ended June 30, 2018 and 2017

Statement 2

	<u>2018</u>	<u>2017</u>
REVENUE		
Interest.....	\$ <u>33,488</u>	\$ <u>29,802</u>
EXPENDITURES		
Travel	167	1,695
Administrative expense	13,513	11,322
Professional fees	3,000	3,000
Insurance	3,502	3,447
Contractual services	<u>2,985</u>	<u>2,843</u>
Total expenditures	<u>23,167</u>	<u>22,307</u>
EXCESS OF REVENUE OVER EXPENDITURES.....	10,321	7,495
FUND BALANCE – BEGINNING	<u>2,413,031</u>	<u>2,405,536</u>
FUND BALANCE – ENDING	\$ <u>2,423,352</u>	\$ <u>2,413,031</u>

The accompanying notes are an integral part of these financial statements.

Central Midwest Interstate Low-Level
Radioactive Waste Compact Commission
STATEMENTS OF CASH FLOWS
For the Years Ended June 30, 2018 and 2017

Statement 3

	<u>2018</u>	<u>2017</u>
CASH FLOWS FROM OPERATING ACTIVITIES:		
Excess (deficiency) of revenue over expenditures	\$ 10,321	\$ 7,495
Adjustments to reconcile excess of revenues over expenditures to cash flows from operating activities:		
Changes in operating assets and liabilities:		
Decrease (increase) in interest receivable	(<u>3,609</u>)	(<u>4,600</u>)
Net cash provided by (used for) operating activities	<u>6,712</u>	<u>2,895</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Investments matured	1,526,654	1,684,114
Investments purchased	(<u>1,533,506</u>)	(<u>1,685,729</u>)
Net cash provided by (used for) investing activities	(<u>6,852</u>)	(<u>1,615</u>)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(<u>140</u>)	<u>1,280</u>
CASH AND CASH EQUIVALENTS – BEGINNING	<u>11,936</u>	<u>10,656</u>
CASH AND CASH EQUIVALENTS – ENDING	<u>\$ 11,796</u>	<u>\$ 11,936</u>

The accompanying notes are an integral part of these financial statements.

All minutes, notices, and other announcements of the Central Midwest Interstate Low-Level Radioactive Waste Commission are available at:
www.cmcompact.org.